

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10 (canceled)

11. (currently amended) A locking device comprising:
- (a) a locking mechanism for locking and unlocking movement of an object;
 - (b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
 - (c) a semiconductor memory device for storing registered fingerprint data;
 - (d) a processor configured to determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said fingerprint sensor matches with any of the registered fingerprint data stored in said semiconductor memory device;
 - (e) a control unit for controlling whether said locking mechanism locks or unlocks movement of said object in response to said fingerprint match determination by said processor; and
 - (f) a portable key unit separated from said locking mechanism and independently portable with respect to said control unit and said locking mechanism, said portable key unit comprising one of the group consisting of: (1) said sensor, said semiconductor memory device, and said processor but not said control unit, and wherein said portable key unit is in communication with said control unit via wireless communication, (2) said sensor and said processor but not said semiconductor memory device and not said control unit, and wherein said portable key unit is in communication with said semiconductor memory device and said control unit via wireless communication, (3) said processor but not said sensor, not said semiconductor memory device, and not said control unit, and wherein said portable key unit is in communication with said sensor, said semiconductor memory device, and said control unit via wireless communication,

and (4) said sensor and said semiconductor memory device but not said processor and not said control unit, and wherein said portable key unit is in communication with said processor and said control unit via wireless communication, and (5) said semiconductor memory device, but not said sensor, not said processor, and not said control unit.

12. (currently amended) The locking device of claim 11 wherein said portable key unit comprises said sensor, said processor, and said semiconductor memory device but not said control unit, and wherein said portable key unit is in communication with said control unit via wireless communication.

13. (currently amended) The locking device of claim 12 wherein said portable key unit is configured to wirelessly communicate with said control unit via ~~(1) at least one electrical connector, (2) wireless communication, (3) magnetic coupling, or (4) electrostatic coupling.~~

14. (previously presented) The locking device of claim 12 wherein said portable key unit is a card.

15. (currently amended) The locking device of claim 11 wherein said portable key unit comprises said processor but not said sensor, not said semiconductor memory device, and not said control unit, and wherein said portable key unit is in communication with said sensor, said semiconductor memory device, and said control unit via wireless communication.

16. (currently amended) A locking device comprising:
(a) a locking mechanism for locking and unlocking movement of an object;
(b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
(c) a semiconductor memory device for storing registered fingerprint data;
(d) a first processor configured to determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said fingerprint sensor matches with any of the registered fingerprint data stored in said semiconductor memory device;

- (e) a second processor in communication with said first processor and said semiconductor memory device, said second processor being configured to (1) create fingerprint data from the fingerprint pattern of an authorized person detected by said fingerprint sensor and (2) register said an authorized person by storing said created fingerprint data in said semiconductor memory device ~~fingerprint data created from said fingerprint pattern of said authorized person and detected by said sensor;~~
- (f) a control unit for controlling whether said locking mechanism locks or unlocks movement of said object in response to said fingerprint match determination by said processor; and
- (g) a portable key unit separated from said locking mechanism and independently portable with respect to said control unit and said locking mechanism, said portable key unit comprising either (i) said first processor ~~and said sensor~~ but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor, or (ii) said second processor ~~and said sensor~~ but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.

17. (currently amended) The locking device of claim 11 wherein said portable key unit comprises said sensor and said processor but not said semiconductor memory device and not said control unit, and wherein said portable key unit is in communication with said semiconductor memory device and said control unit via wireless communication.

18. (canceled)

19. (currently amended) A switching device comprising:

- (a) a starting switch for starting operation of an object;
- (b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
- (c) a semiconductor memory device for storing registered fingerprint data;
- (d) a processor configured to (1) determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said sensor matched

with any of the registered fingerprint data stored in said semiconductor memory device and (2) actuate said starting switch in response to said fingerprint match determination being positive; and

21. (e) a portable key unit separated from and independently portable with respect to said starting switch, said portable key unit comprising one selected from the group consisting of: (1) said sensor, said semiconductor memory device, and said processor, and wherein said portable key unit is configured to communicate with said starting switch via wireless communication, (2) said sensor and said processor but not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said semiconductor memory device and said starting switch via wireless communication, (3) said processor but not said sensor and not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said sensor, said semiconductor memory device, and said starting switch via wireless communication, and (4) said sensor and said semiconductor memory device but not said processor, and wherein said portable key unit is configured to communicate with said processor via wireless communication, ~~and (5) said semiconductor memory device, but not said sensor and not said processor.~~

20. (canceled)

21. (currently amended) The switching device of claim 19 wherein said portable key unit comprises said sensor and said processor but not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said semiconductor memory device and said starting switch via wireless communication.

22. (currently amended) A switching device comprising:

- (a) a starting switch for starting operation of an object;
- (b) a pressure-based fingerprint sensor for detecting a fingerprint pattern comprising at least a portion of a plurality of ridges and a plurality of valleys of a finger in both an x-direction and a y-direction when said finger is pressed against said sensor;
- (c) a semiconductor memory device for storing registered fingerprint data;

(d) a first processor configured to (1) determine by electronic processing whether the fingerprint data created from the fingerprint pattern detected by said sensor matched with any of the registered fingerprint data stored in said semiconductor memory device and (2) actuate said starting switch in response to said fingerprint match determination being positive;

(e) a second processor in communication with said first processor and said semiconductor memory device, said second processor being configured to (1) create fingerprint data from the fingerprint pattern of an authorized person detected by said fingerprint sensor and (2) register said an authorized person by storing said created fingerprint data in said semiconductor memory device ~~fingerprint data created from said fingerprint pattern of said authorized person and detected by said sensor~~; and

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(f) a portable key unit separated from said starting switch and independently portable with respect to said starting switch, said portable key unit comprising either (i) said first processor and said sensor but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor, or (ii) said second processor and said sensor but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.

23. (currently amended) The switching device of claim 31 wherein said portable key unit is configured to wirelessly communicate with said starting switch via (1) at least one electrical connector, (2) wireless communication, (3) magnetic coupling, or (4) electrostatic coupling.

24. (previously presented) The switching device of claim 31 wherein said portable key unit is a card.

Claims 25-30: (canceled)

31. (currently amended) The switching device of claim 19 wherein said portable key unit comprises said sensor, said semiconductor memory device, and said processor, and wherein said portable key unit is configured to communicate with said starting switch via wireless communication.

32. (canceled)

33. (canceled)

34. (previously presented) The locking device of claim 11 wherein said processor is further configured to store said sensed fingerprint pattern in said semiconductor memory device in response to said fingerprint match determination being negative.

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DL 35. (previously presented) The locking device of claim 11 further comprising a clock unit for generating a periodic clock signal and a time determining unit configured to maintain a time value according to said clock signal and identify a time value when a finger is pressed against said sensor, wherein said semiconductor memory device is further configured to store access control data, said access control data identifying when an authorized person for whom registered fingerprint data is stored is allowed to lock or unlock movement of said object, and wherein said processor is further configured such that said locking or unlocking of said object is further dependent upon said processor positively determining from a comparison between said access control data and said identified time value that said authorized person is allowed to lock or unlock movement of said object.

36. (canceled)

37. (canceled)

38. (previously presented) The switching device of claim 19 wherein said processor is further configured to store said sensed fingerprint pattern in said semiconductor memory device in response to said fingerprint match determination being negative.

39. (previously presented) The switching device of claim 19 further comprising a clock unit for generating a periodic clock signal and a time determining unit configured to maintain a time value according to said clock signal and identify a time value when a finger is pressed against said sensor, wherein said semiconductor memory device is further configured to

store access control data, said access control data identifying when an authorized person for whom registered fingerprint data is stored is allowed start operation of said object, and wherein said processor is further configured such that said starting operation of said object is further dependent upon said processor positively determining from a comparison between said access control data and said identified time value that said authorized person is allowed to start operation of said object.

40. (canceled)

41. (canceled)

42. (canceled)

43. (currently amended) The locking device of claim 11 wherein said portable key unit comprises said sensor and said semiconductor memory device, but not said processor and not said control unit, and wherein said portable key unit is in communication with said processor and said control unit via wireless communication.

44. (currently amended) The switching device of claim 19 wherein said portable key unit comprises said sensor and said semiconductor memory device but not said processor, and wherein said portable key unit is configured to communicate with said processor via wireless communication.

45. (currently amended) The switching device of claim 19 wherein said portable key unit comprises said processor but not said sensor and not said semiconductor memory device, and wherein said portable key unit is configured to communicate with said sensor, said semiconductor memory device, and said starting switch via wireless communication.

46. (currently amended) The locking device of claim 16 wherein said portable key unit comprises said first processor ~~and said sensor~~ but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor.

47. (currently amended) The locking device of claim 16 wherein said portable key unit comprises said second processor ~~and said sensor~~ but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.

48. (currently amended) The switching device of claim 22 wherein said portable key unit comprises said first processor ~~and said sensor~~ but not said second processor, wherein said portable key unit is configured to wirelessly communicate with said control unit and said second processor.

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49. (currently amended) The switching device of claim 22 wherein said portable key unit comprises said second processor ~~and said sensor~~ but not said first processor, wherein said portable key unit is configured to wirelessly communicate with said first processor.

50. (new) The locking device of claim 12 wherein said portable key unit is configured to wirelessly communicate with said control unit via infrared communication.

51. (new) The locking device of claim 12 wherein said portable key unit is configured to wirelessly communicate with said control unit via electrostatic coupling.

52. (new) The switching device of claim 31 wherein said portable key unit is configured to wirelessly communicate with said control unit via infrared communication.

53. (new) The switching device of claim 31 wherein said portable key unit is configured to wirelessly communicate with said control unit via electrostatic coupling.

54. (new) The locking device of claim 12 wherein the processor is configured to make a negative fingerprint match determination if said fingerprint data created from the fingerprint pattern detected by said sensor perfectly matches any of said registered fingerprint data.

55. (new) The switching device of claim 31 wherein the processor is configured to make a negative fingerprint match determination if said fingerprint data created from the fingerprint pattern detected by said sensor perfectly matches any of said registered fingerprint data.

56. (new) The locking device of claim 12 wherein the portable key unit comprises a plurality of said processors.

57. (new) The switching device of claim 31 wherein the portable key unit comprises a plurality of said processors.